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EXAMINER

CHEN, QING

ART UNIT	PAPER NUMBER
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2191

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/775,531	Applicant(s) DIAS ET AL.	
	Examiner Qing Chen	Art Unit 2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20060929, 20061102, 20070117, 20070313</u> | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. This is the initial Office action based on the application filed on February 9, 2004.
2. **Claims 1-33** are pending.

Oath/Declaration

3. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not fully identify the mailing address of each inventor. A mailing address is an address at which an inventor customarily receives his or her mail and may be either a home or business address. The mailing address should include the ZIP Code designation. The mailing address may be provided in an application data sheet or a supplemental oath or declaration. See 37 CFR 1.63(c) and 37 CFR 1.76.

Drawings

4. The drawings are objected to because the label "No" should be added next to the arrow indicating a negative decision from Element 1106 in Figure 11. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.

Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where

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necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the Examiner, the Applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities:

- The specification contains the following typographical errors:
 - The application numbers for the U.S. patent applications incorporated by reference are missing on page 1, paragraphs [0003] and [0004].
 - The attorney docket numbers should be deleted on page 1, paragraphs [0001], [0003], and [0004].
 - "then is (sic) step 1108" should be deleted on page 23, paragraph [0114], since reference number 1108 is associated with the step of indexing the captured information as indicated in Figure 11.

Appropriate correction is required.

6. The use of trademarks, such as ORACLE, has been noted in this application. Trademarks should be capitalized wherever they appear (capitalize each letter OR accompany each trademark

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with an appropriate designation symbol, *e.g.*, TM or ®) and be accompanied by the generic terminology (use trademarks as adjectives modifying a descriptive noun, *e.g.*, “the JAVA programming language”).

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner, which might adversely affect their validity as trademarks.

Claim Objections

7. **Claims 2, 6, 7, 15-18, and 30** are objected to because of the following informalities:

- **Claims 2 and 17** recite the limitation “the performance problems.” Applicant is advised to change this limitation to read “the one or more performance problems” for the purpose of providing it with proper explicit antecedent basis.
- **Claim 18** depends on Claim 17 and, therefore, suffers the same deficiency as Claim 17.
- **Claim 6** recites the limitation “the values.” Applicant is advised to change this limitation to read “the one or more values” for the purpose of providing it with proper explicit antecedent basis.
- **Claim 7** depends on Claim 6 and, therefore, suffers the same deficiency as Claim 6.
- **Claims 15, 16, and 30** recite the limitation “the operations.” Applicant is advised to change this limitation to read “the one or more operations” for the purpose of providing it with proper explicit antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. **Claims 1-13, 18, 19, and 26-28** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 26 recite the limitation “the one or more time values.” There is insufficient antecedent basis for this limitation in the claims. In the interest of compact prosecution, the Examiner subsequently interprets this limitation as reading “the one or more values” for the purpose of further examination.

Claims 2-13 depend on Claim 1 and, therefore, suffer the same deficiency as Claim 1.

Claims 27 and 28 depend on Claim 26 and, therefore, suffer the same deficiency as Claim 26.

Claim 3 recites the limitations “broader performance problems” and “narrower performance problems.” The terms “broader” and “narrower” are relative terms, which render the claim indefinite. The terms “broader” and “narrower” are not defined by the claim nor does the specification provide a standard for ascertaining the requisite degree and one of ordinary skill

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in the art would not be able to reasonably determine the scope of the invention. In the interest of compact prosecution, the Examiner subsequently does not give any patentable weight to these limitations for the purpose of further examination.

Claims 4 and 18 recite the limitation “the root problem.” There is insufficient antecedent basis for this limitation in the claims. In the interest of compact prosecution, the Examiner subsequently interprets this limitation as reading “the root performance problem” for the purpose of further examination.

Claims 5 and 19 recite the limitation “if the performance problem may be a cause of the performance problem.” The claims are rendered indefinite as a result of the awkward claim language. In the interest of compact prosecution, the Examiner subsequently does not give any patentable weight to this limitation for the purpose of further examination.

Claim Rejections - 35 USC § 101

10. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

11. **Claims 1-33** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

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The result of **Claims 1-33** is directed to the act of “determining,” which does not appear to be a tangible result so as to constitute a practical application of the idea. The act of “determining” is merely a thought or an abstract idea and does not appear to produce a tangible result even if the step of “determining” does occur, since the result of that determination is not conveyed in the real world. The result is a determination, which is neither used in a disclosed practical application nor made available for use in a disclosed practical application. It also does not appear that the usefulness of the determination can be realized from the claimed steps to support a disclosed specific, substantial, and credible utility so as to produce a useful result.

Therefore, the claims do not meet the statutory requirement of 35 U.S.C. § 101, since the claims are not directed to a practical application of the § 101 judicial exception producing a result tied to the physical world.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. **Claims 1-33** are rejected under 35 U.S.C. 102(b) as being anticipated by **Lowenthal et al.** (US 6,035,306).

As per **Claim 1**, **Lowenthal et al.** disclose:

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- classifying one or more performance problems in a database (*see Column 4: 25-40, "First, the access to the database is "parallelized" ... Second, the access to the data should be "load-leveled" ... Third, the data must be placed so that access to different objects do not conflict or "pile up," ... "*");
- determining one or more values that quantify an impact for the one or more performance problems based on performance of operations in the database (*see Column 8: 61-67, "The time stamp data in FIGS. 6-8 indicates the beginning time at which the schema data is valid. The relationships between plexes, stripe sets, disk drives, and other database structures may change over time as placement is changed. Accordingly, it is important to indicate the time at which the schema data is valid, otherwise the sample data that is collected and stored may be incorrectly interpreted."*);
- determining a performance problem based on the one or more values for the one or more performance problems (*see Column 13: 57-59, "This process would continue with the DBA next looking at the individual tablespaces and files stored in plex 14A until the database objects causing the problem are identified."*); and
- determining a recommendation for a solution for the performance problem (*see Column 14: 22-39, "If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110."*).

As per **Claim 2**, the rejection of **Claim 1** is incorporated; and Lowenthal et al. further disclose:

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- wherein the one or more performance problems include symptoms and root problems, wherein symptoms are analyzed to determine a root performance problem (*see Column 5: 11-25, "... if Table A and Index 1 are both heavily used, the three disks that the stripes of these objects share will be overloaded, and access requests will queue, generating an activity "hot-spot" and costly delays in servicing a customer request for a record."*; Column 11: 12-15, *"After the server, property, statistical type, item to be displayed, and time period have been selected, the user initiates an analysis by activating the "calculate" screen button 80."*).

As per **Claim 3**, the rejection of **Claim 2** is incorporated; and Lowenthal et al. further disclose:

- wherein the symptoms are classified from broader performance problems to narrower performance problems (*see Column 12: 22-28, "After one set of data is displayed, a user can display usage data related to any of the displayed items. Referring again to FIG. 14, further analysis may be carried out for any of the stripe sets shown. By right-clicking on bar 83, a menu 84 may be brought up which allows a user to select the disk, file volume, plex, or tablespace usage associated with stripe 14 for display."*).

As per **Claim 4**, the rejection of **Claim 2** is incorporated; and Lowenthal et al. further disclose:

- wherein the solution comprises any symptoms that were analyzed to determine the root performance problem (*see Column 11: 12-15, "After the server, property, statistical type,*

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item to be displayed, and time period have been selected, the user initiates an analysis by activating the "calculate" screen button 80.").

As per **Claim 5**, the rejection of **Claim 1** is incorporated; and Lowenthal et al. further disclose:

- associating a rule with each performance problem, the rule used to determine if the performance problem may be a cause of the performance problem (*see Column 14: 7-16, "... different properties are more or less important depending on the particular application of the database being analyzed."*); and
- determining the performance problem based on performance problems that have their associated rule satisfied (*see Column 14: 40-45, "Following the above procedure, and assuming that a DBA has changed the placement in accordance with the recommendation, the database system is monitored during normal operation for a period of time so that new samples can be gathered with the new placement in operation. Then the analysis of FIG. 19 would be carried out again."*).

As per **Claim 6**, the rejection of **Claim 1** is incorporated; and Lowenthal et al. further disclose:

- wherein the one or more values comprising time values that quantify the impact of the one or more performance problems (*see Column 8: 61-67, "The time stamp data in FIGS. 6-8 indicates the beginning time at which the schema data is valid. The relationships between plexes, stripe sets, disk drives, and other database structures may change over time as placement is*

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changed. Accordingly, it is important to indicate the time at which the schema data is valid, otherwise the sample data that is collected and stored may be incorrectly interpreted.").

As per **Claim 7**, the rejection of **Claim 6** is incorporated; and Lowenthal et al. further disclose:

- determining the time values using at least one of a time model and a wait model (*see Column 8: 3-5, "Prior to beginning the monitoring operations that periodically sample the database system performance, the DBA must set up a schedule which determines when samples are taken.").*

As per **Claim 8**, the rejection of **Claim 1** is incorporated; and Lowenthal et al. further disclose:

- determining one or more operations in the database that caused the performance problem (*see Column 13: 57-59, "This process would continue with the DBA next looking at the individual tablespaces and files stored in plex 14A until the database objects causing the problem are identified.";* and
- reviewing stored information for the one or more operations to determine the solution (*see Column 14: 22-39, "If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110.").*

As per **Claim 9**, the rejection of **Claim 8** is incorporated; and Lowenthal et al. further disclose:

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- wherein the stored information comprises a snapshot of information for the one or more operations (*see Column 9: 20-23, "These measurements provide a series of snapshots of the system performance which are used by the analysis tool described below to diagnose system problems."*).

As per **Claim 10**, the rejection of **Claim 1** is incorporated; and Lowenthal et al. further disclose:

- wherein determining the recommendation for the solution comprises automatically determining the recommendation for the solution in response to determining the performance problem (*see Column 14: 22-39, "If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110."*).

As per **Claim 11**, the rejection of **Claim 1** is incorporated; and Lowenthal et al. further disclose:

- determining a recommendation rule for the determined performance problem (*see Column 14: 22-39, "If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110."*);

- determining one or more operations that caused the performance problem (*see Column 13: 57-59, "This process would continue with the DBA next looking at the individual tablespaces and files stored in plex 14A until the database objects causing the problem are identified."*);

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- applying the recommendation rule to the one or more operations (*see Column 14: 40-45, "Following the above procedure, and assuming that a DBA has changed the placement in accordance with the recommendation, the database system is monitored during normal operation for a period of time so that new samples can be gathered with the new placement in operation. Then the analysis of FIG. 19 would be carried out again."*); and
- determining a recommendation for the solution using the one or more operations (*see Column 14: 22-39, "The free space in the least busy stripe set is then checked to see whether there is enough room for the plex to be moved to the least busy stripe set, block 114. If there is room, that recommendation is made, block 118."*).

As per **Claim 12**, the rejection of **Claim 1** is incorporated; and Lowenthal et al. further disclose:

- outputting the recommendation for the solution (*see Figures 13-18; Column 11: 18-21, "... the data is displayed as a bar graph with the stripe sets arranged in descending order of usage, as shown in FIG. 14."*).

As per **Claim 13**, the rejection of **Claim 1** is incorporated; and Lowenthal et al. further disclose:

- determining one or more operations that are not causing problems in the database (*see Column 13: 60-62, "... the lightly used resources of the database have also been identified ..."*).

As per **Claim 14**, Lowenthal et al. disclose:

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- collecting information that quantifies an impact for one or more operations performed in the database (*see Column 9: 28-41, "Several different types of data are collected for the disk drive, plex, and database file usage samples."*);
- associating the information for one or more operations with the one or more performance problems (*see Figures 9-11; Column 9: 43-67, "FIG. 9 shows the format for the data taken and stored for the disk performance samples, along with exemplary data."*);
- analyzing the associated information for the one or more performance problems to determine a performance problem (*see Column 13: 57-59, "This process would continue with the DBA next looking at the individual tablespaces and files stored in plex 14A until the database objects causing the problem are identified."*); and
- determining a recommendation for a solution for the performance problem (*see Column 14: 22-39, "If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110."*).

As per **Claim 15**, the rejection of **Claim 14** is incorporated; and Lowenthal et al. further disclose:

- determining when operations that are associated with the one or more performance problems are being performed (*see Column 13: 19-22, "... a DBA using the present invention might first set the Select Interval window 78 in FIG. 13 to select a time period of 7:00 am to 10:00 am on the date in question."*); and
- timing the one or more operations to generate one or more time values for the one or more operations that quantify the impact of the one or more operations (*see Column 8: 61-67,*

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"The time stamp data in FIGS. 6-8 indicates the beginning time at which the schema data is valid. The relationships between plexes, stripe sets, disk drives, and other database structures may change over time as placement is changed. Accordingly, it is important to indicate the time at which the schema data is valid, otherwise the sample data that is collected and stored may be incorrectly interpreted.").

As per **Claim 16**, the rejection of **Claim 15** is incorporated; and Lowenthal et al. further disclose:

- wherein the one or more operations that are associated with the one or more performance problems are determined based on at least one of a time model and a wait model (see Column 8: 3-5, *"Prior to beginning the monitoring operations that periodically sample the database system performance, the DBA must set up a schedule which determines when samples are taken.").*

As per **Claim 17**, the rejection of **Claim 14** is incorporated; and Lowenthal et al. further disclose:

- classifying the one or more performance problems into symptoms and root problems, wherein symptoms are analyzed to determine a root performance problem (see Column 5: 11-25, *"... if Table A and Index 1 are both heavily used, the three disks that the stripes of these objects share will be overloaded, and access requests will queue, generating an activity "hot-spot" and costly delays in servicing a customer request for a record.";* Column 11: 12-15, *"After the*

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server, property, statistical type, item to be displayed, and time period have been selected, the user initiates an analysis by activating the "calculate" screen button 80. ").

As per **Claim 18**, the rejection of **Claim 17** is incorporated; and Lowenthal et al. further disclose:

- wherein the recommendation for the solution comprises any symptoms that were analyzed to determine the root performance problem (*see Column 11: 12-15, "After the server, property, statistical type, item to be displayed, and time period have been selected, the user initiates an analysis by activating the "calculate" screen button 80. ").*

As per **Claim 19**, the rejection of **Claim 14** is incorporated; and Lowenthal et al. further disclose:

- associating a rule with each performance problem, the rule used to determine if the performance problem may be a cause of the performance problem (*see Column 14: 7-16, "... different properties are more or less important depending on the particular application of the database being analyzed. "); and*

- determining the performance problem based on performance problems that have their associated rule satisfied (*see Column 14: 40-45, "Following the above procedure, and assuming that a DBA has changed the placement in accordance with the recommendation, the database system is monitored during normal operation for a period of time so that new samples can be gathered with the new placement in operation. Then the analysis of FIG. 19 would be carried out again. ").*

As per **Claim 20**, the rejection of **Claim 14** is incorporated; and Lowenthal et al. further disclose:

- determining one or more operations in the database that caused the performance problem (*see Column 13: 57-59, "This process would continue with the DBA next looking at the individual tablespaces and files stored in plex 14A until the database objects causing the problem are identified."*); and
- reviewing stored information for the one or more operations to determine the solution (*see Column 14: 22-39, "If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110."*).

As per **Claim 21**, the rejection of **Claim 20** is incorporated; and Lowenthal et al. further disclose:

- wherein the stored information comprises a snapshot of information for the one or more operations (*see Column 9: 20-23, "These measurements provide a series of snapshots of the system performance which are used by the analysis tool described below to diagnose system problems."*).

As per **Claim 22**, the rejection of **Claim 14** is incorporated; and Lowenthal et al. further disclose:

- wherein determining the recommendation for the solution comprises automatically determining the recommendation for the solution in response to determining the performance

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problem (see Column 14: 22-39, "If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110.").

As per **Claim 23**, the rejection of **Claim 14** is incorporated; and Lowenthal et al. further disclose:

- determining a recommendation rule for the determined performance problem (see Column 14: 22-39, "If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110.");
- determining one or more operations that caused the performance problem (see Column 13: 57-59, "This process would continue with the DBA next looking at the individual tablespaces and files stored in plex 14A until the database objects causing the problem are identified.");
- applying the recommendation rule to the one or more operations (see Column 14: 40-45, "Following the above procedure, and assuming that a DBA has changed the placement in accordance with the recommendation, the database system is monitored during normal operation for a period of time so that new samples can be gathered with the new placement in operation. Then the analysis of FIG. 19 would be carried out again."); and
- determining a recommendation for the solution using the one or more operations (see Column 14: 22-39, "The free space in the least busy stripe set is then checked to see whether there is enough room for the plex to be moved to the least busy stripe set, block 114. If there is room, that recommendation is made, block 118.").

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As per **Claim 24**, the rejection of **Claim 14** is incorporated; and Lowenthal et al. further disclose:

- outputting the recommendation for the solution (*see Figures 13-18; Column 11: 18-21, "... the data is displayed as a bar graph with the stripe sets arranged in descending order of usage, as shown in FIG. 14."*).

As per **Claim 25**, the rejection of **Claim 14** is incorporated; and Lowenthal et al. further disclose:

- determining one or more operations that are not causing problems in the database (*see Column 13: 60-62, "... the lightly used resources of the database have also been identified ..."*).

Claims 26-28 are computer program product claims corresponding to the method claims above (Claims 1, 10, and 11) and, therefore, are rejected for the same reasons set forth in the rejections of Claims 1, 10, and 11.

Claims 29-33 are computer program product claims corresponding to the method claims above (Claims 14, 15, 20, 22, and 23) and, therefore, are rejected for the same reasons set forth in the rejections of Claims 14, 15, 20, 22, and 23.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Qing Chen whose telephone number is 571-270-1071. The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 4:00 PM. The Examiner can also be reached on alternate Fridays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wei Zhen, can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



WEI ZHEN
SUPERVISORY PATENT EXAMINER

QC / QC
March 29, 2007